To: **CMEQ**
From: **Utilities and Sustainability Task Force**
Re: **Progress Report and Recommended Actions**
Date: **2/26/07**

## Overview

Energy is essential to daily life, powering every form of public, private and commercial activity. Because San Mateo County is fortunate to have a safe, reliable energy supply, it is easy to take energy for granted. But because energy is so critically important to the continued health and prosperity of the region, local government leaders need to understand where energy comes from, and the costs and risks associated with it. The San Mateo County Energy Overview (attached) puts this issue in perspective.

In developing a 20-year Energy Strategy for the county, the Utilities and Sustainability Task Force (USTF) has investigated the following topics:

- historical, current and projected energy use
- link between energy and water
- largest local energy users
- energy regulatory framework
- impact of energy use on climate change and the local environment
- free and low-cost energy-efficiency and water-saving programs
- barriers to change

The results of these investigations will be included in the Energy Strategy. The Task Force believes it is important to start building support for the Energy Strategy among the jurisdictions now, and invites participation and input as the Energy Strategy is developed.

Based on the escalating regulatory activity and public concern about climate change, USTF encourages the cities and the Board of Supervisors to begin considering how they will address such issues, both individually and as a group.

## Energy Issues

A general highlight of the energy issue is provided in the following attachments:

**San Mateo County Energy Overview**
**Sample Resolution**
**Energy Use Scenarios**
**Shared Opportunities**
**Suggested Goals for the Energy Strategy**

A more detailed report is provided in the attachment:

## Next Steps

USTF will continue to review programs and policies that encourage energy efficiency, water conservation, clean energy and greenhouse gas reductions. The programs will include those aimed at local governments, businesses and residents. After surveying the available resources and

the experience of other jurisdictions, USTF will recommend specific numeric goals for energy use reduction, water conservation and renewable energy ratios for the county as a whole. USTF believes it is appropriate to adopt the state's goals for greenhouse gas emissions.

USTF will then draft the Energy Strategy, which will include:

- background material to help local leaders understand current and projected local energy demand and how it relates to local energy production and distribution planning
- the financial and environmental benefits of reducing local energy use, water use and greenhouse gas emissions
- case studies from other cities and counties that have pursued similar strategies
- programs and policies that can help cities and the Board of Supervisors save energy, water and money
- recommended targets and milestones

The Energy Strategy will be circulated for comment, revised as needed and then submitted to CMEQ, C/CAG and the cities and the County for approval and adoption.

**Recommendations**

USTF requests that CMEQ take the following actions regarding the Energy Strategy:

- Approve this Report and submit it to C/CAG for discussion and approval;

- Request that C/CAG share this Report with the cities and the Board of Supervisors, and encourage each jurisdiction to pass the Resolution and participate in the development of the Energy Strategy;

- Suggest that each jurisdiction identify one or more officials (preferably one elected official and one staff member) to take the lead on energy, water and climate issues, since these issues are expected to increase in importance going forward, and

- Begin to consider whether a permanent entity is needed within the C/CAG structure to address energy, water, climate and other utility issues.

**San Mateo County Energy Overview**

The Problem:
San Mateo County as a whole is projected to use 22% more energy in 2027 than it uses today. The region cannot afford to stay on this trajectory, either financially or environmentally.

The Solution:
Local governments, businesses and residents can reduce the amount of energy they use by becoming more energy-efficient and, where appropriate, switching to clean, renewable energy.

The Mechanisms:
Free services are available to help local governments and other groups understand how to save energy. Rebates and financial incentives are available to offset the cost of investing in energy efficiency and clean energy.

The Benefits:
Saving energy saves money, period. Saving energy also reduces the need for additional local energy infrastructure (such as power plants and transmission lines), and it helps to cut the greenhouse gas emissions that cause climate change.

The Cost of Action:
It takes time and sometimes money to become energy-efficient. Elected officials and staff will need to understand the issues and options in order to implement an energy-saving program. Some choices may require a capital investment, although low-cost loans are available. Businesses and residents will also have to educate themselves on the subject to reap the benefits.

The Cost of Inaction:
If energy use within San Mateo County continues to grow, local governments, businesses and residents will spend an increasing percentage of their budgets on utility bills. PG&E will build more local power plants and transmission lines. The region will fail to help the state meet its goal of drastically cutting greenhouse gas emissions. If too few communities take action to reduce energy use, the long-term impacts will be severe: San Francisco Airport and portions of Foster City, Redwood City and other Bay-side communities will be underwater by the end of the century.

The Next Step:
USTF requests CMEQ to approve the attached Report and Recommendations and forward it to C/CAG for discussion and approval. USTF also requests that C/CAG urge the cities and the county to pass the proposed Resolution, and to support and implement elements of the Energy Strategy upon its completion.

# RESOLUTION

**A RESOLUTION OF THE {CITY COUNCIL/ BOARD} OF THE {CITY/ COUNTY} OF {CITY/ COUNTY} SUPPORTING THE DEVELOPMENT OF AN ENERGY STRATEGY FOR SAN MATEO COUNTY**

**WHEREAS,** the City/County Association of Governments (C/CAG) of San Mateo County has established a task force to develop an Energy Strategy to consider the current and future energy needs of the county; and,

**WHEREAS,** the Energy Strategy will recommend a course of action that will address the San Mateo County needs in a fiscally cost effective, environmentally friendly, and socially responsible manner; and,

**WHEREAS,** energy conservation can result in significant cost savings to the {City/ County}; and,

**WHEREAS,** there is a growing recognition that the world must better manage and address its energy usage in order to reduce the impact of global warming and the corresponding climate change; and

**WHEREAS,** it is in the best interests financially and socially of the {City/ County} of {City/County} to actively participate;

**NOW, THEREFORE, BE IT RESOLVED** by the {Council/ Board} of the {City/ County} of {City/ County} that it 1-Supports the development of the Energy Strategy 2- Will review and discuss the issues addressed in the Energy Strategy 3- Provide feedback as appropriate and 4-Consider implementing appropriate and beneficial strategies upon its completion.

**PASSED, APPROVED, AND ADOPTED THIS {X}TH DAY OF {MONTH}, {YEAR}.**

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*{Name} {Title}*

**Energy Use Scenarios**

Business as Usual Scenario

- Energy use in San Mateo County will continue to rise
- Energy prices will continue to rise
- More power plants, transmission lines and other infrastructure will be needed to meet the county's energy needs
- Expanding the local energy infrastructure will be expensive
- Climate change impacts caused by energy production and use will increase dramatically, both locally and globally

Energy-Saving Scenario

- Free and low-cost consulting services, rebates and other financial incentives help local governments, residents and businesses find cost-effective ways to reduce energy use
- Energy efficiency measures are widely adopted in all sectors, saving money for users and taxpayers
- Financial incentives spur local governments, businesses and residents to switch to clean, renewable energy sources
- Water conservation measures are adopted to save even more energy
- Lower overall energy use delays or prevents the need for new energy infrastructure
- San Mateo County meets or exceeds the state’s mandated greenhouse gas emissions reductions on time, every time
- The fast-growing clean technology industry is centered in San Mateo County, bringing growth and good jobs to the area
- The worst impacts of climate change are averted by concerted action and strong leadership

## Shared Opportunities

Shared challenges

- For policy-makers, energy issues are complex and time-consuming to understand. The state's energy regulatory environment is confusing. The emerging regulatory framework on climate change will be even worse.

- Even individuals or organizations that are generally in favor of saving energy don't know what to do, don't have the time to figure it out and don't know whether their efforts will make a difference.

- Some people are worried that energy-saving measures will require them to sacrifice or otherwise diminish their lifestyle.

- The connection between energy production and climate change is not widely understood. Many individuals and organizations do not realize how their energy-saving actions can help combat climate change.

- No local government or organization has spare budget or staff to address energy and climate change issues.

Shared solutions

- Flex Your Power, ABAG Energy Watch and many other local and statewide programs offer extensive information, resources, tools and services to help all sectors save energy and lower their utility bills.

- Financial incentives and special programs dramatically reduce the cost of installing solar panels, allowing local governments, businesses and others to generate their own clean energy and reduce the need for new power plants.

- Local governments in the Bay Area and throughout the world have successfully implemented energy-efficiency measures that save money and combat climate change. Their experiences and their experts are available to help others facing the same challenges.

- In the Energy Strategy, USTF will suggest the programs that are, to the greatest extent possible, high-impact, cost-effective and easy to implement. The recommended programs will encompass enough variety and flexibility to meet the needs of all jurisdictions.

- USTF is seeking broad input to ensure that the Energy Strategy meets the needs of all the cities and the Board of Supervisors.

- Cities and County lower their energy use and cost with an additional benefit to the environment.

**Suggested Goals for the Energy Strategy**

1. Reduce overall energy use throughout the county through energy efficiency and demand reduction measures

2. Reduce water consumption as another way to save energy

3. Develop and increase the use of clean, renewable energy sources

4. Meet the state's targets for greenhouse gas emissions through conservation measures

## SAN MATEO COUNTY ENERGY STRATEGY

## Detailed Findings

### Energy Use

### Future Needs

PG&E projects that San Mateo County's energy needs will increase at the rate of 1% per year for the next five years, based on historical usage rates and other factors. While PG&E does not release projections beyond that timeframe, USTF believes it is appropriate to assume the 1% annual growth rate for the 20-year period addressed by the Energy Strategy.[1] If left unchanged, even this modest annual increase will result in the use of 22% more energy than the current year by 2026.

### Analysis

It is necessary to reverse the trend of increasing energy use, and instead take action to lessen the amount of energy used in the county each year. Doing so offers economic and environmental benefits and will help maintain the county's high standard of living.

Several factors lead to this conclusion.

1. Rising energy costs – The cost for fossil fuels like oil and natural gas will continue to rise.[2] Dedicating an increasingly large portion of city and county budgets to pay for energy will be neither fiscally prudent nor politically popular. Reducing the amount spent on energy, in contrast, will free up budget dollars for other local priorities. The same logic applies to businesses and residents.

2. Relationship of energy infrastructure to energy use - The amount of energy infrastructure (power plants, transmission lines) needed to deliver energy to San Mateo County homes and businesses corresponds to the amount of energy used. If energy use continues to increase, particularly during peak periods (hot summer afternoons when air conditioners are used widely), PG&E will need to develop new energy sources and build new transmission lines in San Mateo County. Siting such facilities is controversial, and construction is expensive and disruptive. If future power needs can be met by existing facilities, these problems can be avoided.

3. Public health issues - Even though we live in an area with relatively clean energy sources, no power plant is benign. The "peaker" power plants used during peak energy periods are usually dirtier than other plants, so reducing peak demand in particular can have a small positive effect on public health.[3]

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[1] The county's expected population growth and increasingly hot summers are likely to drive up energy demand at the historical rate or higher.

[2] A Congressional report, "The Implications of Rising Energy Costs upon Small Business" (Aug. 2006) says the national growth rate for energy costs increased between 17% and 23% in the 2005-2006 period. See the report at http://www.house.gov/smbiz/democrats/Reports/ENERGY%20REPORT%202006.pdf.

[3] The California Energy Commission financed an independent study to quantify this beneficial impact. See "Public Health Benefits of End-Use Electrical Energy Efficiency in California" at http://www.energy.ca.gov/pier/environmental/project_summaries/PS-500-02-004_McKONE.PDF.

4. Financial benefits for businesses - Economic competitiveness is enhanced by energy efficiency. Not only can local businesses avoid incurring higher costs for energy as prices increase, they can save money year after year by reducing their energy consumption. Lower utility bills decrease operating expenses, making energy-efficient businesses more competitive than rivals elsewhere that don't make an effort to save energy.

5. Energy-related business opportunities - Economic opportunity can be enhanced throughout the county by a coordinated policy initiative to save energy. Local investors and businesses are trying to develop a strong clean energy /clean technology sector in the Bay Area, focused on such alternative energy sources as solar, wind and tidal power, biodiesel, ethanol and energy-saving technologies. San Mateo County will be more successful in attracting these new businesses and jobs if its communities support energy efficiency and the use of alternative energy technologies.[4]

6. The impact of energy production and use on climate change - Carbon dioxide ($CO_2$) and other greenhouse gases are released when carbon-based fossil fuels such as natural gas, coal and petroleum are burned to create energy. These gases trap the sun's rays inside the earth's atmosphere, causing the temperature of the air, land and oceans to rise.[5] This slow but steady increase in the earth's temperature is referred to as global warming. The term "climate change" is used to indicate the impact of increased global temperatures on both short-term and long-term climate patterns across the world.

The simplest, **fastest and most cost-effective way to reduce harmful greenhouse gas emissions is to reduce the overall amount of energy used**, and to use cleaner forms of energy.

7. Regulatory framework - California's governor and legislature have created an energy regulatory framework that strongly encourages:

- Energy conservation: using less energy, such as turning off a light that is not in use
- Energy efficiency: consuming less energy to achieve a result, such as using a highly-efficient compact fluorescent light instead of an incandescent bulb
- Demand response: using rate discounts to encourage electricity users to limit their energy use when demand is high, as a way to lower their costs and prevent power outages
- Renewable energy: getting power from natural and renewable sources, such as the sun, wind and water (using solar panels, wind turbines, hydroelectric dams, etc.)

[4] 79% of venture capitalists surveyed said that public policies are a factor in their clean technology investment decisions, and 91% said that pro-environmental public policy can attract clean tech business to a region. "Creating Cleantech Clusters: 2006 Update," ("Cleantech Clusters") http://www.pewclimate.org/docUploads/Creating%20Cleantech%20Clusters%20%2D%2D%20E2%20%26%20CVN%20May%202006%2Epdf.

[5] For a more detailed explanation of the impact of greenhouse gases on climate, see the Union of Concerned Scientists website, http://www.ucsusa.org/global_warming/science/emissions-of-heattrapping-gases-and-aerosols.html.

A wide assortment of policies, products, programs and financial incentives are offered by the state and the energy regulatory agencies to assist local governments, businesses and consumers to reduce their use of energy.[6]

## Energy Usage and Efficiency

In fall 2006, the Governor and the state legislature passed landmark legislation mandating significant reductions in greenhouse gas emissions from "stationary sources" such as power plants and petroleum refineries. Even though AB32 starts by targeting specific industries, local governments will play an important role in helping the state meet its aggressive reduction goals of returning to 1990 greenhouse gas levels by the year 2020 (approximately a 25% decrease from today's emission rates), and 80% below that level by 2050.

Decreasing the level of energy use throughout the county is a critical first step in reducing greenhouse gases and slowing the impact of climate change as directed by the state.[7]

**Recommended goals**: Reduce overall energy use throughout the county through energy efficiency and demand reduction measures, and

Meet the state's targets for greenhouse gas emissions through conservation measures.

## Water and Wastewater

A significant amount of energy is used in the county to pump and treat water. Statewide, 19% of electricity and 32% of natural gas is used for water-related activities of supply, heating, transport and treatment.[8] The numbers are lower in San Mateo County because 93% of its water comes from Hetch Hetchy, which is transported by gravity and requires less treatment than most sources.

Reducing the amount of water used in energy-intensive applications (such as residential hot water use[9]) can contribute significantly to overall energy savings. [10]

**Recommended goal**: Reduce water consumption as another way to save energy.

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[6] See generally http://www.energy.ca.gov/. California's 30-year history of energy efficiency has kept the state's per-capita energy use relatively flat compared to an average 45% increase in other states. Its programs and policies have been widely emulated. See "2005 California Integrated Energy Policy Report," p. 8, http://www.energy.ca.gov/2006publications/CEC-100-2006-001/CEC-100-2006-001-CTF.PDF.

[7] For more information on the state's extensive climate change activities, visit the California Climate Change Portal at http://www.climatechange.ca.gov/index.html.

[8] For more on this topic, see "California's Water-Energy Relationship," http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF.

[9] Energy is used to transport, treat, heat and deliver water used in a shower or dishwasher, as well as to transport and treat the resulting wastewater. Lessening the number of gallons used saves energy at every step.

[10] Conserving water will provide additional benefits beyond energy savings. Many scientists believe global warming will reduce the Sierra snowpack by mid-century, thus limiting the amount of potable water available for human use. See details in "Our Changing Climate: Assessing the Risks to California," pp 6-7, at http://www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.PDF.

## Clean Energy

Fossil-fuel based energy production is a major cause of air pollution and harmful greenhouse gas emissions. PG&E's mix of energy is among the cleanest in the nation, with 12% California-based renewables, 20% hydropower and only 1% coal, but 42% of its electricity is still derived from natural gas.[11]

The California Renewable Energy Portfolio Standard calls for renewables like solar and wind power supply 20% of the state's energy by 2010 and 33% by 2020.[12] The Million Solar Roofs Initiative and other incentive programs are bringing the cost of clean alternatives within reach of local governments, businesses and homeowners, making clean energy a financially attractive option.[13] Moreover, the continued growth of the clean energy sector, encompassing renewables like hydro, solar, wind, wave and bio-based fuels, offers tremendous financial upside for the state and the region.[14]

**Recommended goal**: Develop and increase the use of clean, renewable energy sources.

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[11] http://www.pge.com/education_training/about_energy/how_electric_system_works/2005_energy_mix.html.

[12] http://www.energy.ca.gov/renewables/index.html.

[13] See examples of financial incentives at http://www.consumerenergycenter.org/erprebate/index.html and http://www.fypower.org/res/tools/rgl.html.

[14] The Cleantech Clusters Report found that every $100 in venture capital money invested in a clean tech company will yield 2700 jobs and $500 million in incremental annual revenue directly, plus additional indirect jobs and income, over a 20-year horizon. http://www.pewclimate.org/docUploads/Creating%20Cleantech%20Clusters%20%2D%2D%20E2%20%26%20CVN%20May%202006%2Epdf.